

## **REMARKS/ARGUMENTS**

These remarks are submitted in response to the Office Action of December 23, 2008 (Office Action). Claims 1-21 are pending. No new matter has been added. It should be noted that the terms Applicant, Applicants, Applicant's, and Applicants' as used herein shall relate to all inventors associated with the present Office Action.

The Office Action rejected claims 1-11 and 22 under 35 U.S.C. 101 where the Office Action asserts that the claimed invention is directed to non-statutory subject matter. This rejection is moot as to claim 22 which has been cancelled. Applicant respectfully disagrees but in the interest of advancing the prosecution, the claims have been amended to recite the use of the first, second and third computing devices. The specification provides support for this statutory subject matter as follows:

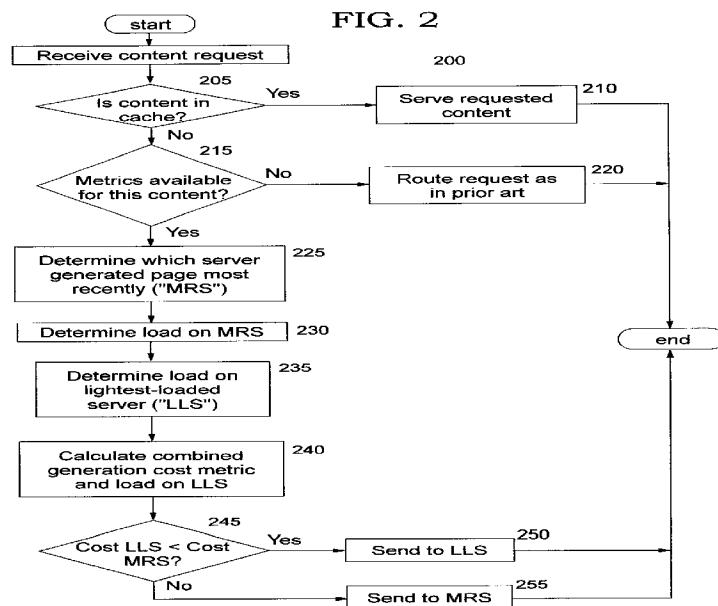
The Module Manager 210 is preferably a lightweight component, where instances are created each time a new request is received and discarded after the request has been handled. This methodology reduces the wasting of CPU cycles as the module manager 210 does not run in a loop waiting for something to happen. It is also preferable that the Module Manager instances are stateless. This property enables dynamic loading of modules since each module manager 210 has no memory of what modules were available on any previous request. Such an implementation is detailed in Designing Enterprise Applications with the Java.TM. 2 Platform, Enterprise Edition, by Nicholas Kassem and the Enterprise Team, Version 1.0.1, Final Release, Oct. 3, 2000, which is incorporated herein by reference in its entirety. It is further preferable that each instance of the module manager 210 is multi-threaded. Accordingly, a new thread may be created for each request and discarded for the completed response.

To load modules, local and remote module loading functions 216 and 218 are provided. The loading of modules is performed dynamically and in accordance with a module's particular physical relationship to the module manager 210. Local modules may reside on the same physical device and communication between the module manager 210 and the local modules may be via memory calls, object inheritance, inter-process communication, or the like. Remote modules may be located in other devices logically connected to the module manager 210 and information is

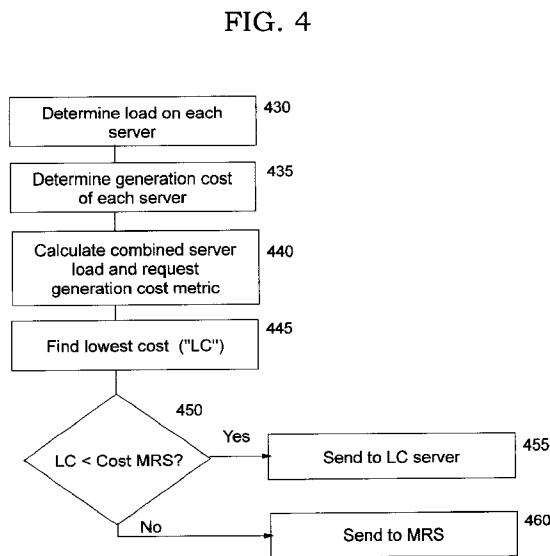
passed using other means such as via TCP/IP sockets, etc.  
(Specification paragraphs 24 and 27)(emphasis added)

The Office Action rejects claims 1-5, 8-10, 12, 14, 15, 17, 19, and 20 under 35 U.S.C. 103 as being unpatentable over Bavadekar in view of Doyle, further in view of Stumm and further in view of Noble. Claims 1-5, and 8-10 include the feature of the stateless module manager enabling only one of the information modules to claim the requests and to receive all subsequent requests associated with the type of information, where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. Claims 12, 14, and 15 include the step of enabling only one of the information modules to claim the requests and to own subsequent requests based on the type of information being common to each of the requests and the subsequent requests where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. Claims 17, 19, and 20 include computer executable instructions for enabling only one of the information modules to claim the requests and to own subsequent requests based on the type of electronic information being common to each of the requests and the subsequent requests where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. The Office Action concedes that Bavadekar does not disclose these features, but asserts that Doyle discloses allowing servers to claim client requests such that subsequent requests for the same type of information will be handled by the server that handled the first request.

Applicant respectfully points out that Doyle is directed towards a load balancing system where a server that most recently generated content can process the same content subsequently, but only when the load balancing for the system is satisfied as shown in steps 225 through steps 245 of FIG. 2 where the lightest load server (LLS) will generate the content rather than the most recent server (MRS) based on cost metrics:



This load-balancing technique is also shown in FIG. 4 of Doyle:



Moreover, in order to determine the load, Doyle would need to monitor load conditions including availability of servers during various requests. Thus, Doyle does not disclose the claimed feature of the stateless module manager enabling the only one

information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests.

Additionally, one of ordinary skill in the art would not modify Doyle so that the servers generate the content independently of an availability of the servers for previous requests since the objective of the Doyle system is to take into consideration server availability:

An object of the present invention is to provide improved load balancing techniques.

Another object of the present invention is to provide a load balancing technique which more efficiently routes requests for dynamic content generation.

**Yet another object of the present invention is to provide a load balancing technique that considers cost metrics when determining where to route a content request.**

Other objects and advantages of the present invention will be set forth in part in the description and in the drawings which follow and, in part, will be obvious from the description or may be learned by practice of the invention.

**To achieve the foregoing objects, and in accordance with the purpose of the invention as broadly described herein, the present invention provides methods, systems, and computer program products for improving load balancing operations using cost metrics.** This technique preferably comprises: obtaining cost metrics representing a cost of generating document content; receiving a request for particular document content; and using the obtained cost metrics as a factor when routing the request to a selected one of a plurality of servers. (As an alternative to routing the request, a response may be created using cached content, if available.) (Doyle col. 2, lines 14-39)(emphasis added).

The remaining references do not make up for the deficiencies in Bavadekar and Doyle.

The Office Action rejects claims 6, 16, 21 and 22 under 35 U.S.C. 103(a) as being unpatentable over Bavadekar in view of Doyle, further in view of Stumm, further in view of Noble and further in view of US 6,757,900 to Burd et al. This rejection is moot as to claim 22 which has been cancelled. Claim 6 depends from claim 1 and includes

the feature of the stateless module manager enabling only one of the information modules to claim the requests and to receive all subsequent requests associated with the type of information, where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. Claim 16 depends from claim 12 and includes the step of enabling only one of the information modules to claim the requests and to own subsequent requests based on the type of information being common to each of the requests and the subsequent requests where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. Claim 21 depends from claim 17 and includes the feature of computer executable instructions for enabling only one of the information modules to claim the requests and to own subsequent requests based on the type of electronic information being common to each of the requests and the subsequent requests where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. As described above, Bavadekar, Doyle, Stumm and Noble all fail to disclose this claimed feature. The remaining reference of Burd does not make up for this deficiency in the cited art.

The Office Action rejects claim 7 under 35 U.S.C. 103(a) as being unpatentable over Bavadekar in view of Doyle, further in view of Stumm, further in view of Noble and further in view of US 2002/10087657 to Hunt. Claim 7 depends from claim 1 and includes the feature of the stateless module manager enabling only one of the information modules to claim the requests and to receive all subsequent requests associated with the type of information, where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. As described above, Bavadekar, Doyle, Stumm and Noble all fail to disclose this claimed

feature. The remaining reference of Hunt does not make up for this deficiency in the cited art.

The Office Action rejects claim 11 under 35 U.S.C. 103(a) as being unpatentable over Bavadekar in view of Doyle, further in view of Stumm, further in view of Noble and further in view of US 6,741,980 to Langseth et al. Claim 11 depends from claim 1 and includes the feature of the stateless module manager enabling only one of the information modules to claim the requests and to receive all subsequent requests associated with the type of information, where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. As described above, Bavadekar, Doyle, Stumm and Noble all fail to disclose this claimed feature. The remaining reference of Langseth does not make up for this deficiency in the cited art.

The Office Action rejects claims 13 and 18 under 35 U.S.C. 103(a) as being unpatentable over Bavadekar in view of Doyle, further in view of Stumm, further in view of Noble and further in view of US 6,374,300 to Masters et al. Claim 13 depends from claim 12 and includes the step of enabling only one of the information modules to claim the requests and to own subsequent requests based on the type of information being common to each of the requests and the subsequent requests where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. Claim 18 depends from claim 17 and includes the feature of computer executable instructions for enabling only one of the information modules to claim the requests and to own subsequent requests based on the type of electronic information being common to each of the requests and the subsequent requests where the stateless module manager enables the only one information module to receive the requests and all subsequent requests independent of an availability of the information modules for previous requests. As described above, Bavadekar, Doyle, Stumm and

Noble all fail to disclose these claimed features. The remaining reference of Masters does not make up for this deficiency in the cited art.

**CONCLUSION**

Applicant believes that this application is in full condition for allowance. Allowance is therefore respectfully requested. Applicant requests that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

Date: March 23, 2009

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